A-GICF
1.4
1-13-93

WORKSHEET 1
SUMMARY SCORE SHEET

Site Name/Location (City, County, Section/Township/Range):

ACE GALVANIZING COMPANY
Seattle, King County

The site is in Section 5, T23N, R4E.

Site Description (Include management areas, compounds of concern, and quantities):

Ace Galvanizing Company is a metal galvanizing and oiling facility. There have been reports of discharges to the surface of sludge, acids, caustics, and brines used during the galvanizing and oiling processes resulting in contamination of the soil and groundwater.

Management Areas Contaminated soil and ground water.

Compounds of Concern Nickel, Zinc, Copper, Lead, Cadmium, Chromium, and TPH

Quantities Unknown

Special Considerations (Include limitations in site file data or data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site, or any other factor(s) over-riding a decision of no further action for the site):

This is part of the 96th Street complex. Approximately 14 sites on this street are listed in the Site Management and Information System (SMIS).

ROUTE SCORES:

Surface Water/Human Health:	20.6	Surface Water/Environ.:	32.3
Air/Human Health:	N.S.	Air/Environmental:	N.S.
Ground Water/Human Health:	37.0		

OVERALL RANK: 4

Rev. 5/31/91

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List substances to be considered for scoring: Source: 1

Cadmium, Chromium, Copper, Nickel, Lead, Zinc, TPH

Explain basis for choice of substance(s) to be used in scoring.

Sampling revealed presence in soils and storm drains

List management units to be considered in scoring: Source: 1

Contaminated soil, drums, and storage tanks

Explain basis for choice of unit used in scoring. Source: 1

Surface water → Soil → Ground Water → Duwamish River

2. AIR ROUTE

List substances to be considered for scoring: Source: 1

TPH, Cadmium, Chromium, Copper, Nickel, Lead, Zinc

Explain basis for choice of substance(s) to be used in scoring.

If present in sampling and testing

List management units to be considered in scoring: Source: 1

Contaminated soils

Explain basis for choice of unit used in scoring.

Not used - site is asphalted and not readily available to the air

WORKSHEET 2 (CONTINUED)
ROUTE DOCUMENTATION

3. GROUND WATER ROUTE

List substances to be considered for scoring: Source: 1

TPH, Cadmium, Chromium, Copper, Nickel, Lead, and Zinc

Explain basis for choice of substance(s) to be used in scoring.

Analytical data and lab results

List management units to be considered in scoring: Source: 1

Contaminated soil and groundwater

Explain basis for choice of unit used in scoring.

analytical data

WORKSHEET 3
SUBSTANCE CHARACTERISTICS WORKSHEET
FOR MULTIPLE UNIT/SUBSTANCE SITES

	Combination 1	Combination 2	Combination 3

Unit: **NOT APPLICABLE**

Substance:

SURFACE WATER ROUTE

Human Toxicity Value:

Environ. Toxicity Value:

Containment Value:

Surface Water Human Subscore:

Surface Water Environ. Subscore:

AIR ROUTE

Human Toxicity/Mobility Value:

Environ. Toxicity/ Mobility Value:

Containment Value:

Air Human Subscore:

Air Environ. Subscore:

GROUND WATER ROUTE

Human Toxicity/ Mobility Value:

Containment Value:

Ground Water Subscore:

WORKSHEET 4
SURFACE WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Carcinogenicity WOE	PF*	Val.
1.Cadmium	5	8	0.0005	5	225(RAT)	5	B1	--	0
2.Chromium	100	6	1	3	--	0	A	--	0
3.Copper	1300	2	0.037	1	--	0	--	--	0
4.Lead	5	8	--	0	--	0	B2	--	0
5.Nickel	100	6	0.02	1	--	0	A	0.84	0
6.Zinc	4000	2	0.2	1	--	0	--	--	0

*Potency Factor

Source: 2
Highest Value: 8
+2 Bonus Points? 2
Final Toxicity Value 10

1.2 Environmental Toxicity

Substance	Acute Criteria (ug/l)	Value	Non-human Mammalian Acute Toxicity (mg/kg)	Value
1.Cadmium		8	225(rat)	5
2.Chromium		6	--	0
3.Copper		2	--	0
4.Lead		6	--	0
5.Nickel		2	--	0
6.Zinc		4	--	0

Source: 2 Value: 8

1.3 Substance Quantity

Source: 1 Value: 2

Explain basis: from .0.39-1.9 acres

WORKSHEET 4 (CONTINUED)
SURFACE WATER ROUTE

2.0 MIGRATION POTENTIAL

2.1 Containment — Source: 1 Value: 10
Explain basis: Some drums with oils and mineral spirits, above ground tanks.

2.2 Surface Soil Permeability: Medium — Source: 1 Value: 3

2.3 Total Annual Precipitation: 33.8 inches — Source: 1 Value: 3

2.4 Max. 2-Yr/24-hour Precipitation: 2.0 inches — Source: 1 Value: 2

2.5 Flood Plain: no — Source: 1 Value: 0

2.6 Terrain Slope: <2 % — Source: 1 Value: 1

3.0 TARGETS

3.1 Distance to Surface Water: One mile — Source: 1 Value: 2

3.2 Population Served within 2 miles: ✓pop.= 0 — Source: 1 Value: 0

3.3 Area Irrigated within 2 miles: 0.75✓no. acres=0 — Source: 1 Value: 0

3.4 Distance to Nearest Fishery Resource: 1 mile — Source: 1 Value: 3

3.5 Distance to, and Name(s) of, Nearest Sensitive Environment(s) Municiple Park - 2900 feet N.E. — Source: 1 Value: 6

4.0 RELEASE
Explain basis for scoring a release to surface water: Contaminated sediments — Source: 1 Value: 5

WORKSHEET 5
AIR ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction (WARM Scoring Manual) - Please review before scoring

1.2 Human Toxicity

Substance	Air Standard (ug/m^3)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Carcinogenicity WOE	PF*	Val.
1.									
2.									
3.									
4.			**NOT SCORED**						
5.									
6.									

*Potency Factor

Source:_____
Highest Value:_____
+2 Bonus Points?_____
Final Toxicity Value:_____

1.3 Mobility (Use numbers to refer to above listed substances)

1.3.1 Gaseous Mobility
Vapor Pressure(s): 1=___ ; 2=___ ; 3=_____ Source:_____
4=___ ; 5=___ ; 6=_____ **Value:**_____

1.3.2 Particulate Mobility
Soil type:_____ Source:_____
Erodibility:_____ **Value:**_____
Climatic Factor:_____

1.4 Final Human Health Toxicity/Mobility Matrix **Value:**_____

1.5 Environmental Toxicity/Mobility

Substance	Non-human Mammalian Acute Toxicity	Value	Mobility	Value
1.				
2.				
3.				
4.				
5.				
6.				

Environmental Toxicity/Mobility Matrix Source:_____ **Value:**_____

WORKSHEET 5 (CONTINUED)
AIR ROUTE

1.6 Substance Quantity:_____ Source:_____ Value:_____
Explain basis:_____
_____
_____
_____

2.0 MIGRATION POTENTIAL

2.1 Containment:_____ Source:_____ Value:_____
_____
_____

3.0 TARGETS

3.1 Nearest Population:_____ Source:_____ Value:_____

3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s)_____ Source:_____ Value:_____
_____
_____
_____

3.3 Population within 0.5 miles: ✓population=_____ Source:_____ Value:_____

4.0 RELEASE

Explain basis for scoring a release to air:_____ Source:_____ Value:_____
_____
_____
_____
_____

WORKSHEET 6
GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Carcinogenicity WOE	PF*	Val.
1.Cadmium	5	8	0.0005	5	225(rat)	5	B1	0.8	0
2.Chromium	100	6	1	3	--	0	A	--	0
3.Copper	1300	2	0.037	1	--	0	--	--	0
4.Nickel	100	6	0.02	1	--	0	A	--	0
5.Zinc	4000	2	0.2	1	--	0	--	--	0
6.Methylene Chloride	5		0.06	1	1600(rat)	3	B2	0.0075	2

*Potency Factor

Source: 2
Highest Value: 8
+2 Bonus Points? 2
Final Toxicity Value 10

1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions 1)= 3, 2)=1, 3)=2, 4)=2, and 5)= 3 Source: 3 Value: 3

OR
Solubility(mg/l) _____

1.3 Substance Quantity Source: 1 Value: 2
Explain basis: Contaminated soil, ground water

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 1 Value: 10
Explain basis: Contaminated soil

2.2 Net Precipitation: 20.7 inches Source: 1 Value: 3

2.3 Subsurface Hydraulic Conductivity: >10-5 to 10-3 Source: 1 Value: 3

2.4 Vertical Depth to Ground Water: 0-25 feet Source: 1 Value: 8

WORKSHEET 6 (CONTINUED)
GROUND WATER ROUTE

3.0 TARGETS

3.1 Ground Water Usage: Not used but usable Source: 1 Value: 2

3.2 Distance to Nearest Drinking Water Well: N/A ft Source: 1 Value: 0

3.3 Population Served within 2 Miles: ✓population= 0 Source: Value: 0

3.4 Area Irrigated by (Groundwater) Wells within 2 miles: 0.75✓no.acres= 0 Source: 1 Value: 0

4.0 RELEASE

Explain basis for scoring a release to ground water: Analytical evidence of release of zinc to ground and groundwater Source: 1 Value: 5

SOURCES USED IN SCORING

1. Parametrix, Site Hazard Assessment
2. SAIC, Toxicology Database for use in WARM Scoring.
3. Washington Ranking Method Scoring Manual, Hazardous Waste Investigations and Cleanup Program, April 1990
4.
5.
6.
7.
8.
9.
10.